AFRILAB-IV/22/Report

Report of the Fourth meeting of the African Soil Laboratory Network (AFRILAB)

Virtual meeting, 18 - 19 October 2022

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Rome, 2022

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Introduction

The fourth meeting of the African Soil Laboratory Network (AFRILAB) was held online on 18 and 19 October 2022. The meeting was attended by about 110 laboratory staff members and managers from 34 African countries. The list of participants is available in Annex I.

The meeting was opened by Ms. Lesego Mooketsi-Selepe, AFRILAB Chair, Mr. Abdourahaman Moustapha, vice-Chair of the Global Soil Laboratory Network (GLOSOLAN) and Ms. Anne Muriuki, African Soil Partnership Chair, who recalled the importance of good quality, harmonized data in decision making and the link between GLOSOLAN and global soil mapping activities. Ms. Mooketsi-Selepe ultimately recalled the objectives of the meeting: (i) to inform African laboratories on GLOSOLAN progress and the way forward, (ii) to bring soil laboratories issues and challenges to the attention of national governments by bridging the gap between soil laboratories and national focal points to the Global Soil Partnership (GSP), (iii) to discuss the results of the GLOSOLAN proficiency test (PT) 2022, (iv) to identify the standard operating procedures for GLOSOLAN and AFRILAB to harmonize, and (v) to open the discussion on the interpretation of laboratory results and the provision of recommendations to farmers.

In order to meet these objectives, national focal points to the GSP were invited to attend the first day of the meeting (see agenda in Annex II).

Highlights and conclusions

Ms. Lucrezia Caon (GLOSOLAN coordinator) opened the meeting by introducing national focal points to the GSP and new AFRILAB members to GLOSOLAN, recalling that uncertainty in soil data is currently too large to monitor changes in soil properties, to make scientific conclusions or to pay for ecosystem services. By improving the performance of soil laboratories and reducing uncertainty in the measurement, GLOSOLAN plays a key role in providing better soil data for better soil management and decision-making. At present, GLOSOLAN is composed of almost 1 000 member laboratories organized into Regional Soil Laboratory Networks (RESOLANs). Since 2021, GLOSOLAN supports countries in establishing their National Soil Laboratory Networks (NASOLANs).

Thereafter, the discussion focused on the following topics:

- National Soil Laboratory Networks (NASOLANs).

During the meeting, representatives from Botswana, Cameroon, Nigeria, Senegal and Zimbabwe shared their experience on the establishment of their NASOLANs. The lack of coordination among laboratories and national institutions was identified as the main impediment to the establishment of NASOLANs in Cameroon, Senegal and Zimbabwe. Some countries reported problems of accreditation and infrastructure in poor condition which affect the well-functioning of the laboratories and hampered the establishment of a proper NASOLAN. Still, laboratories are trying to support each other and set up quality control exercises (even among few laboratories). In order to establish a NASOLAN, participants stressed the need to improve

the collaboration among laboratories and with other stakeholders operating in the country. In particular, GSP Focal Points should be brought on board as well as FAO's country offices.

During the discussion, laboratories from Sao Tome and Principe enquired as to whether they could join the NASOLAN of another country since they are too few to establish a network themselves. It was suggested to connect with laboratories operating in other African Portuguese-speaking countries to explore the possibility of establishing a sub-network within AFRILAB. To bring current GLOSOLAN information on NASOLANs, Ethiopia and Senegal stated that they have a NASOLAN.

Countries were invited to provide information on the status of establishment of their NASOLAN or their NASOLAN activities to the GLOSOLAN coordinators. Information will be used by the GLOSOLAN coordinators to create or update NASOLAN webpages. The GLOSOLAN coordinators also reminded participants about the Terms of Reference for NASOLANs and the guidelines on how to establish a National Soil Laboratory Network that provides stepwise instructions to develop the national networks and reports interesting study cases.

- Bridging the gap between soil laboratories and national governments

Mr. Filippo Benedetti (GLOSOLAN Alternate Coordinator) presented the results of the survey on the interaction between national reference laboratories and national focal points to the GSP. The survey was completed by the national reference laboratories for Botswana, Eswatini, Kenya, Kenya, Gambia, Lesotho, Malawi, Nigeria, Sierra Leone and Tanzania. When asked about the type of support they receive from the government, the majority of laboratories (73 percent) answered that they do not receive any type of support. Otherwise, 27 percent of them receive moral support or support in terms of recognition and visibility at the national level.

The majority of laboratories (64 percent) do not receive any support from sponsors or donors other than the government. Still, the majority of laboratories that answered the survey (six) are the main and unique data providers to their government for national soil assessment and mapping activities. Four laboratories declared to act as main data providers to their government together with other institutions while one laboratory declared not to be involved in national soil assessment and mapping activities at all.

Overall, the lack of communication between laboratories and national focal points was seen as a main obstacle to the implementation of laboratory activities in the region. AFRILAB members also pointed out that often, national focal points do not appoint suitable laboratories to the role of national reference laboratories, resulting in major complications for the countries and region. Ultimately, AFRILAB will propose GLOSOLAN to guide national focal points through the appointment of the national reference laboratories as following:

1. All laboratories from a given country will assess each other;
2. Election of the laboratory that can better comply with the role of national reference laboratory;
3. Presentation of the laboratory to the national focal point to the GSP;
4. Endorsement of the elected laboratory by the national focal point to the GSP;
5. Formalization of the position within GLOSOLAN.

In this regard, national reference laboratories will be elected with the national focal point taking a marginal role in the process. AFRILAB also proposed to put a limit to the mandate of the national reference laboratories (e.g. two years) and to establish a formal procedure to assess their performance. Shall this proposal be approved by GLOSOLAN, the Terms of Reference of National Reference Laboratories will be revised.

Mr. Giacomo Rocchegiani (GSP Secretariat) presented an overview of the governance around the import of soil samples in the region and their disposal after analysis. He highlighted that only around 35 percent of African countries have national regulations that cover the import, handling or disposal of soil samples. In most cases, such a lack is compensated by guidelines developed by individual laboratories, especially regarding the disposal of samples. This scenario leads to inconsistencies even within the same country. Mr. Rocchegiani stressed the importance for national governments to act on the formulation of specific plans and policies to support laboratories with the import and disposal of soil samples. In conclusion, he reminded participants about the online tools developed by the GSP to collect national soil regulations and policies; these are (i) the SIMPLE database and the (ii) SoiLEX portal.

- AFRILAB performance in the GLOSOLAN PT 2022

Mr. Christian Hartmann (IRD, France) presented an overview of the performance of the AFRILAB members that participated to the GLOSOLAN Proficiency Test (PT) 2022. Fifty-eight soil laboratories from 31 African countries received a parcel containing a set of ten soil samples. Each sample contained 10 g of homogenized soil material that had been dried, sterilized and packed in double-layered plastic bags. Each sample was labelled in progression using the suffix "GLO-" (i.e. GLO-1, GLO-2, etc.). Laboratories were asked to determine a few basic chemical parameters for each sample, namely: soil carbon, total nitrogen and soil available phosphorus. While total nitrogen and available phosphorus were not mandatory parameters to analyze, PT participants were asked to deliver results on carbon as a mandatory condition to join the PT. This condition was decided due to the global need to have precise data on the organic carbon content of the soil, given its role in mitigating climate change.

The PT instructions delivered to each participant specified that the Standard Operating Procedures (SOPs) harmonized by GLOSOLAN should have been used to analyze each soil parameter. These were:

SOPs on carbon:

- Total carbon by Dumas dry combustion method available in English, Spanish and Russian (EN | ES | RU);
- Organic carbon by Walkley and Black method – titration and colorimetric method available in English, Spanish and Russian (EN | ES | RU);
- Organic matter by loss of ignition. Please note that GLOSOLAN does not have a SOP for measuring organic matter by loss of ignition at 450-550 °C yet.

SOPs on phosphorus:

- Soil available phosphorus by Olsen method available in English only (EN)
- Soil available phosphorus by Bray I method available in English only (EN)
- Soil available phosphorus by Bray II method available in English only (EN)

SOPs on nitrogen:

- Soil total nitrogen by Dumas dry combustion method available in English only (EN)

- Soil total nitrogen by Kjeldahl method available in English only (**EN**)

The low amount of soil needed to carry out the analysis using the methodologies reported above allowed participants to perform more than one procedure for the same parameter.

Each laboratory was provided with a unique pin code to be used to upload the analysis results on an online platform that was developed by GLOSOLAN with the purpose of facilitating the collection of data from PT participants and guarantee anonymity.

The presented results were based on the data that was successfully submitted by 44 laboratories only (out of the 58 which received the samples) and thus used for the statistical analysis. 14 laboratories did not submit the results in time to be included in the analysis and their performance will be not assessed, despite having received the samples for the GLOSOLAN PT. Mr. Hartmann remarked the importance of ensuring a clear overview of the countries' regulations prior to proceeding in shipping the soil samples. This information should also be made available on the GLOSOLAN's soil import legislation (SIMPLE) database. He also highlighted the great opportunity given to the labs to participate to the exercise for free, as the preparation and delivery of PT samples is a time-consuming and expensive operation.

Mr. Hartmann shared some outcomes on the performance of African laboratories for the carbon analysis. The overall results (on both the regional and world scales) will be described in detail in the PT global report, which is under preparation. Moreover, all PT participants received an individual report of their performance.

The analysis of the PT results allowed for insight for the most adopted methodologies. For instance, it seems that most AFRILAB laboratories use the Walkley and Black method to measure soil organic carbon, as 41 out of the 44 participants of the GLOSOLAN PT submitted results following this procedure. The Dumas method was used by only five laboratories, while eight PT participants from the region submitted results using loss of ignition method. As explained above, laboratories could perform more than one methodology to determine the same parameter (e.g. both Walkley and Black and Dumas), as long as there was sufficient sample quantity.

Results obtained using Walkley and Black method (see figure 1) highlighted that the uncertainty (i.e. dispersion of the results around the consensus values) of the analysis results received from African laboratories participating to the PT was extremely large (coefficient of variation close to 50 percent). Moreover, Mr. Hartmann explained that within the ten-sample set received by laboratories, five samples were actually replicas of the same soil. This was done to test laboratories' precision in blindly measuring the same soil material multiple times. Overall, results suggested that AFRILAB members determined similar consensus values, despite the large dispersion previously mentioned. Moreover, the boxplots reported in figure 1 highlight that some outliers were also presented.

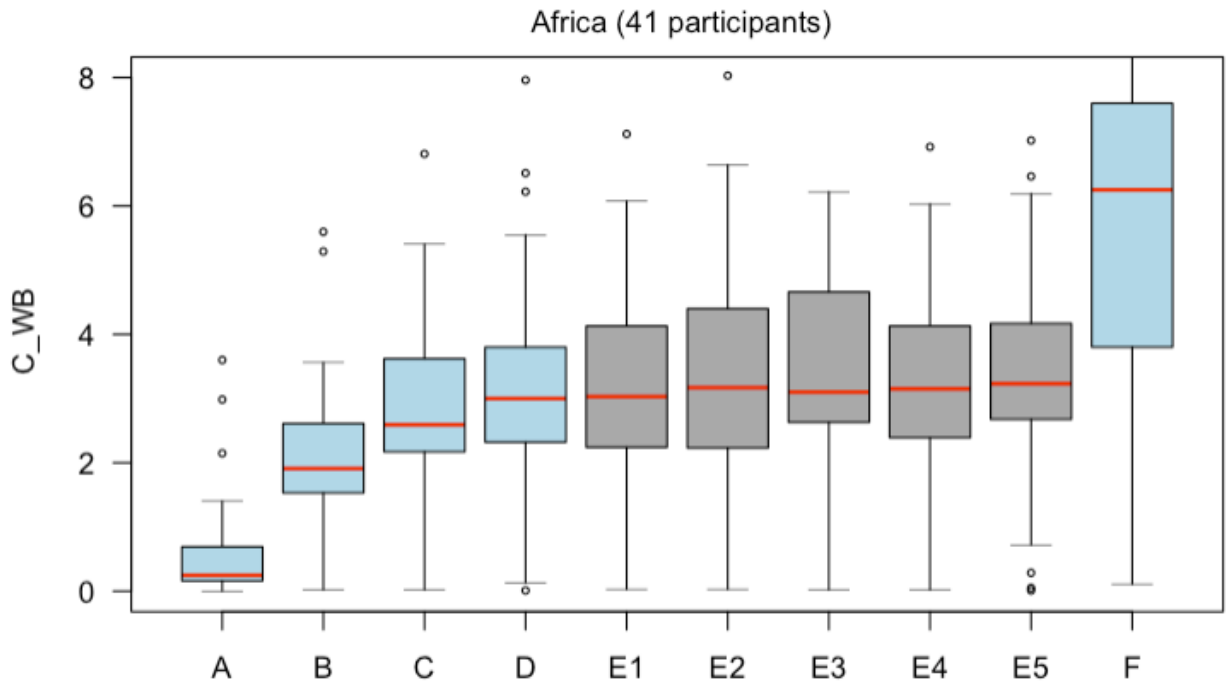

Figure 1 – Boxplots reporting the results collected from the AFRILAB participants to the GLOSOLAN PT 2022 for soil organic carbon using the GLOSOLAN SOP for Walkley and Black method. Letters A-F correspond to the samples delivered to laboratories ordered from the lowest to the highest carbon content. Please note that the A-F order does not coincide with the order of samples' labelling (GLO-1, GLO-2, etc.). The y-axis report carbon content (percentage).

Mr. Hartmann informed participants that the data collected using the Dumas and loss of ignition methods were very low in number (five and eight submissions only, respectively). For this reason, it was not possible to proceed with a statistical analysis and the derived boxplots result in an illustration of the consensus values depending on the method. Consequently, the graphs for these two methods are not included in this report.

Mr. Benedetti informed participants that a regional PT among AFRILAB members might be implemented in 2023, thanks to the support of the IRD and the British Geological Survey (which already prepared the samples).

- Standard Operating Procedures (SOPs)

Ms. Caon recalled how GLOSOLAN SOPs are harmonized, stressing that a modified procedure is followed when there are few experts on a topic in the working groups or when there are only few laboratories using a given method. In this regard, harmonization matrices are used as a reference within the working group and are not sent to the GLOSOLAN network for completion.

In order to open the discussion on the SOPs that AFRILAB recommends GLOSOLAN to harmonize in 2022, Ms. Caon summarized the SOPs that the network harmonized already. See table 1. To note that since GLOSOLAN already harmonized the majority of methods widely used worldwide, in 2023, RESOLANs will focus on harmonizing SOPs of regional relevance.

Table 1. SOPs harmonized by GLOSOLAN in 2019 - 2022

	2019	2020	2021	2022
Chemical	OC Walkley and Black, TC Dumas, Calcium carbonate eq. (titrimetric and volumetric calcimeter methods)	Phosphorus (Bray I, Bray II, Olsen, Mehlich I), pH, electrical conductivity (in water and in saturated paste), nitrogen (Dumas, Kjeldah), carbon (Tyurin)	Particulate organic carbon (physical fractionation), Quasi-total elements (digestion using aqua regia and EPA), Exchangeable bases and CEC (ammonium acetate), available micronutrients (extraction using DTPA), Boron (hot water extraction), Mehlich III for macro and micronutrients (including S and B)	Organic matter (loss of ignition), Available phosphorus (KCl), Exchangeable acidity + Exchangeable Al (KCl), Soil buffer capacity (KOH), Fe and Al oxides (ammonium oxalate)
Physical			Particle size-distribution (hydrometer, pipette), bulk density, moisture content (gravimetric method)	Water retention (pF) curve, Particle density (pycnometer)
Biological			Microbial biomass C and N by chloroform fumigation-extraction, soil respiration	Microbial Enzyme Activities (B-Glucosidase, Arylsulfatase, Dehydrogenase), N Mineralization (incubation method), Nematodes trophic groups (wet extraction), QBSar, ISO-TSBF

AFRILAB will propose GLOSOLAN to harmonize the following SOPs:

- *Chemical parameters:*
  - Mineral nitrogen – ammonium and nitrate nitrogen (plant available N) by KCl
  - Resin extractable P

- *Physical parameters:*
  - K sat
  - Aggregate stability

- *Biological parameters:*
  - DNA extraction
  - Earthworm sampling and identification
  - Ryzobia classification

- Interpretation of laboratory results and provision of recommendations to farmers

Mr. Cornelius Zemba (Zambian Ministry of Agriculture) shared his experience with the use of soil laboratory data in the field, highlighting farmers' perspective. Mr. Zemba reported that most Zambian small-scale farmers could not afford the costs of the soil analysis and showed little interest in soil testing. Therefore, the government developed blanket recommendations that can be used by farmers according to the crop type. Nevertheless, larger farming companies adopt regular soil testing schemes implemented at each production cycle. Mr. Zemba also informed participants that soil testing facilities in Zambia are insufficient to cover the country's demand. Investing in advanced techniques like soil spectroscopy may help but major capacity development activities are needed. Soil testing kits can also represent a useful tool as their use would reduce the volume of samples brought to the few operating laboratories in the country. During the discussion, participants proposed potential actions to encourage farmers to invest in soil analysis. A

suggestion was made to get soil experts and soil laboratories representatives to meet with farmers and explain to them the value and benefits of having reliable soil data.

In Botswana, farmers often prefer to ship their soil samples abroad as they consider the national laboratories to be unreliable. In this case, it was suggested to continue investing in quality control procedures and share the outcomes of such practices at the country level, highlighting the precision that may be achieved by laboratories, and the lower cost of processing the samples within the country.

- Capacity building

In order to promote technical and scientific cooperation in the region and to further build the capacities of laboratories, AFRILAB proposed that GLOSOLAN creates a database on laboratories available to host visiting scientists. Of note is that laboratories from Morocco participated to the AFRILAB meeting because of their interest in collaborating and supporting the region. In this regard, Moroccan laboratories are open to visiting scientists in Rabat, Kenitra and Nador.

Mr. Benedetti closed the meeting by introducing participants to the new GLOSOLAN website and by inviting them to participate in the 6th GLOSOLAN meeting from 22 to 24 November 2022. Laboratories were also invited to send video messages wishing happy birthday to GLOSOLAN in their local languages. Videos will be displayed at the *Five years of GLOSOLAN* celebration on November 10.

Venue and time of the next meeting

The fifth AFRILAB meeting will take place online between September and October 2023.

Annex I. List of participants

Ms. Lucrezia Caon, Global Soil Partnership Secretariat, FAO HQ

Mr. Filippo Benedetti, Global Soil Partnership Secretariat, FAO HQ

Ms. Miriam Ostinelli, GLOSOLAN Chair, Argentina

Ms. Julia Mousquer, Global Soil Partnership Secretariat, FAO HQ

Mr. Giacomo Rocchegiani, Global Soil Partnership Secretariat, FAO HQ

Ms. Magdeline Vlasimsky, Global Soil Partnership Secretariat, FAO HQ

Mr. Christian Hartmann, Institut de recherche pour le développement, France

Ms. Amandine Erktan, UMR Eco&Sols, France

Name	**Laboratory**	**Country**
Cossi Tiburce Oussou	INRAB/L2A2S2E	Benin
Baganetsi Karabo Sebogisi	BUAN SOIL LAB	Botswana
Baganetsi Karabo Sebogisi	BUAN SOIL LAB	Botswana
Gabobonwe Sejong	Soil and Plant Analytical Laboratory	Botswana
Kelebileone Kaisara	University of Botswana Okavango Research Institute Environmental Laboratory	Botswana
Lesego Mooketsi-Selepe	Soil and Plant Analytical Laboratory	Botswana
Lisa Keatlhokile Masilo	Lisbeth Investments Pty ltd	Botswana
Nkosi Ndabambi	Nkosi Ndabambi	Botswana
Trust Manyiwa	Botswana International University of Science & Technology-Soil Science lab	Botswana
Mamoudou Traore	National Soil Office	Burkina Faso
Arlende Flore Ngomeni Epse Nguengoue	Point Focal National GSP Cameroun	Cameroon
Edouard Nya	Laboratoire National d'Analyse Diagnostique des Produits et Intrants Agricoles (MINADER)	Cameroon
Gaelle Manguele	Laboratoire d'analyse des sols, plantes, eaux et engrais (LASPEE)	Cameroon
Rose Ndango	International Institute of Tropical Agriculture I.I.T.A.	Cameroon
Yvette Clarisse Mfopou Mewouo	Laboratoire d'Analyses des Sols, Plantes, Eaux et Engrais (LASPEE)	Cameroon
Zing Zing Bertrand	LASPEE	Cameroon
Jean-Arsene Yamale	Laboratoire de Sol Fidèle Ngouanze	Central African Republic
Jean-Arsene Yamale	Laboratoire de pédologie Centrafrique	Central African Republic
Mohamed Egueh Walieh	laboratoire de Pédologie	Djibouti

Sougueh Cheik	CERD	Djibouti
Samuel Bereket Ghebremariam	Samuel Bereket Ghebremariam	Eritrea
Abdulmalik Mohammed	bedele Soil laboratory	Ethiopia
Belay Beyene	Bedele soil laboratory	Ethiopia
Habtamu Assaye Deffersha	Bahir Dar University Soil and Plant Analysis Laboratory	Ethiopia
Mamaru Shitaw	Soil and Plant Analysis Laboratory	Ethiopia
Melese Mulu	werer soil plant and water laboratory	Ethiopia
Musefa Redi Abegaz	Holeta Agricultural Research Center Soil Laboratory	Ethiopia
Na	Werer soil and water analysis laboratory	Ethiopia
Yenesew Anmaw	Jinka agricultural research center soil laboratory	Ethiopia
Elodie Kombila Epse Boussougou	Ministére agriculture	Gabon
Jean Aubin Ondo	Laboratoire Pluridisciplinaire des Sciences	Gabon
Lazare Ossende-Essanga	Labosoladag	Gabon
Neil-Yohan Musadji	Laboratoire d'Analyse des Sols et Environnement	Gabon
Rolf Mabicka Obame	Laboratoire d'Analyse des Sols et Environnement	Gabon
Abdou Rahman Jobe	MoA, Soil Laboratory	Gambia
Edward Yeboah	CSIR-Soil Research Institute Analytical Laboratory	Ghana
Sadick Adams	Analytical Services	Ghana
Guy Fernand Yao	Laboratoire Central Sols-Eaux-Plantes (LCSEP) du Centre National de Recherche Agronomique (CNRA)	Ivory Coast
Jean-Martial Johnson	AfricaRice Soil Fertility Laboratory	Ivory Coast
Salifou Goube Mairoua	AfricaRice Soil Laboratory	Ivory Coast
Anne Muriuki	National Agricultural Research Laboratories	Kenya
David Samoei	University of Eldoret	Kenya
Edwin Senengo	Bureau Veritas Kenya Limited	Kenya
Hannah Karuri	USL	Kenya
Langat Edwin	IMARA ANALYTICAL LABORATORIES- KERICHO	Kenya
Lewis Kingori	KALRO	Kenya
NA	KALRO	Kenya
Reagan Mwangi	KALRO	Kenya
Hlongwane Maseeiso	Agric Research National Laboratory	Lesotho
Malefetsane Khesuoe	Soils Laboratory	Lesotho
Gelboikai Keita	University of Liberia, Fendell Lab	Liberia
Marie Paule Razafimanantsoa	Laboratoire des Radioisotopes	Madagascar
Michel Rabenarivo	LRI	Madagascar
Alick Mphembera	ARET	Malawi
Emmanuel Mbewe	Soil and Plant Analytical Research Laboratory	Malawi
Moses Munthali	Chitedze Soils Laboratory	Malawi
Souleymane Dambe	LPCM/Lsep	Mali
Cherif Ahned	Iset laboratoire	Mauritania

Jad Tahouri	Laboratoire de Géosciences, Environnement et Ressources Associées (LGERA))	Morocco
Arlindo Manhica	IIAM-SOIL WATER, AND PLANTS LABORATORY	Mozambique
Momade Mamudo Ibraimp	Laboatorio Regional de Analise de solos e Plantas	Mozambique
Oscar Chichongue	Soil plant and water testing laboratory of the Institute of Agricultural Research of Mozambique (IIAM)	Mozambique
Josephath Kutuahupira		Namibia
Abdourahaman Elh Moustapha	LASEVE(Laboratoire d'Analyses de Sol Eaux Vegetaux et Engrais)	Niger
Saidou Addam Kiari	LASEVE	Niger
Adebowale Adewoye	Soil and Plant Nutrition Laboratory, Cocoa Research Institute of Nigeria	Nigeria
Idowu Afolabi	National Soil Laboratory	Nigeria
Joseph Uponi	IITA Analytical Service Laboratory Ibadan	Nigeria
Mary Odukoya	Geochemistry Lab Unilag	Nigeria
Suleiman Garba	Phosphorus laboratory	Nigeria
Suleiman Usman	Federal University Dutse Soil Science Laboratory	Nigeria
Surajo M. Usaini Rimi	National Soil Testing Laboratory Complex Kaduna	Nigeria
Victor Chude	Nigeria Institute of Soil Science Analytical Laboratory Kaduna, Nigeria	Nigeria
Williams Egbe	National Soil and fertilizer laboratory, Kaduna	Nigeria
Anastase Harelimana	not specified	Rwanda
Antonia Neto	LabCIAT	São Tomé e Principe
Alassane Traore	Institut de technologie nucléaire appliquée	Senegal
Georgette Rokhy Ndiaye	laboratoire sols-eaux-plantes de Bambey	Senegal
Hanane Aroui	IRD	Senegal
Marie Pierre Tine	LAMA DAKAR	Senegal
Pape Macoumba Faye	Itna	Senegal
Ramatoulaye Ndiaye	LASP- Saint-Louis	Senegal
Abdul Rahman Kamara	Njala University Quality Control Laboratory	Sierra Leone
Nuqcl Kamara	NUQCL	Sierra Leone
Khalid Omar Ali	Agrilab-Som	Somalia
Frans Joseph	Lesoetsa Frans	South Africa
Frederick Pohl	ARC Analytical	South Africa
Garry Paterson	ARC	South Africa
Nicholas Mamadi	Nooitgedacht Soil Testing Station	South Africa
Noluthando Sotaka	Noluthando	South Africa
Warren Frost	Goodwood Food Forest	South Africa
Zanele Hlam	ARC-SCW Analytical Services	South Africa
Adam Gudo	University of Juba /School of Engineering	South Sudan
Gbénonchi Mawussi	Laboratoire d'Analyses des Sols et des Végétaux	Togo
Ahimbisibwe Denis	Jabba Soil Laboratories	Uganda

Kabango Freddie	AfriLab	Uganda
Steven Senabulya	Jabba Soil Laboratory	Uganda
Cornelius Zemba	Ministry of Agriculture	Zambia
Gideon Musukwa	University of Zambia	Zambia
Bellington Mudyawabikwa	ICRISAT	Zimbabwe
Na	CHEMISTRY AND SOIL RESEARCH	Zimbabwe
Shepherd K Mudzingwa	Fambidzanai Agroecology Labs	Zimbabwe
Takesure Tendayi	Soil Science & Environment	Zimbabwe
Thembinkosi Mbedzi	University of Zimbabwe	Zimbabwe
Tonderai Chihota	FSG Superfert Zimbabwe	Zimbabwe
Zsari Mutatu	ZSARI	Zimbabwe

Annex II: Agenda

Day 1 – October 18	
10:00 – 10.15	**Opening, endorsement of the agenda and group picture** *Ms. Lesego Mooketsi-Selepe, AFRILAB Chair* *Mr. Abdourahaman Moustapha, GLOSOLAN Vice-Chair* *Ms. Anne Muriuki, African Soil Partnership Chair*
10:15 - 10:50	**Item 1. Quick updates (global, regional)** • What is GLOSOLAN • Main achievements at global and regional levels • Regional capacities needs • NASOLANs: establishment and activities (stories from the region: Botswana**,** Nigeria) *Ms. Lucrezia Caon – GSP Secretariat, FAO*
10.50 - 11:50	**Item 2. Soil laboratories and national government: bridging the gap** • NRLs survey outcomes *Mr. Filippo Benedetti – GSP Secretariat, FAO* • National Soil Laboratory Networks • Open discussion on how to strengthen the collaboration and communication between laboratories and national Focal Points (governments) • Resource mobilization • Improvement of national soil legislation systems (soil import, waste management and disposal, drainage system, etc.) *Mr. Giacomo Rocchegiani – GSP Secretariat, FAO* • Presentation of the projects implemented/under implementation in the region (both by GSP and other organizations) • Discussion on country-specific project proposals *Moderator: Mr. Sougueh Cheik, AFRILAB Vice-Chair*
11:50 - 12:00	**Item 3. Announcements** • New GLOSOLAN website • GLOSOLAN 5th anniversary celebrations • 6th GLOSOLAN meeting *Mr. Filippo Benedetti – GSP Secretariat, FAO*
12:00	**Closure of the meeting**
DAY 2 – October 19	
10:00 - 10:30	**Item 4. Proficiency testings**

	• GLOSOLAN proficiency test (PT) 2021: regional outcomes Mr. Christian Hartmann, *Institut de Recherche pour le Développement* • Regional and national PTs • Contribution to GLOSOLAN PT organization and implementation (link to video, NRLs survey) *Moderator: Mr. Michael Watts, British Geological Survey*
10:30 - 11:00	**Item 5. Standard Operating Procedures (SOPs)** • GLOSOLAN harmonization process (updates, introductory session organization) • Prioritize GLOSOLAN documents to be translated *Moderator: Mr. Takesure Tendayi, AFRILAB Vice-Chair*
11:00 – 11:20	**Item 6. Capacity building** • GLOSOLAN video trainings (need for more subtitles, launch a call for new videos) • GLOSOLAN webinars: call for trainers *Mr. Filippo Benedetti, GSP Secretariat - FAO*
11:20 – 11.50	**Item 7. Interpretation of laboratory results and provision of recommendations to farmers** • Develop regional-based interpretation guidelines • The point of view of agricultural extension agents *Mr. Cornelius Zemba, Ministry of Agriculture - Zambia* *Moderator: Mr. Sadick Adams*
11:50 – 12:00	**Item 8. Closing remarks**
12:00	**Closure of the meeting**